



## Water-proofing the Future

A flood of visions

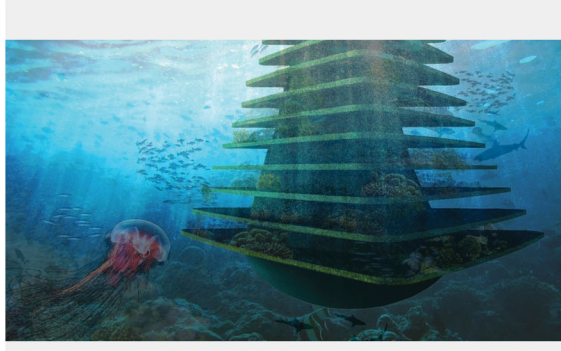
0  
Comments



The lure of the sea: Pacific islands perched in glistening aquamarine, softly lapping waves caressing Europe's beaches. Now, many of these bucket list hotspots are about to be reclaimed by our beloved sea. Naturally, we know all about rising sea levels. Cities like Venice as well as entire coastal regions, a. o. in The Netherlands, are acutely threatened by this development. But what can we do to stave off the danger?

### In deep water

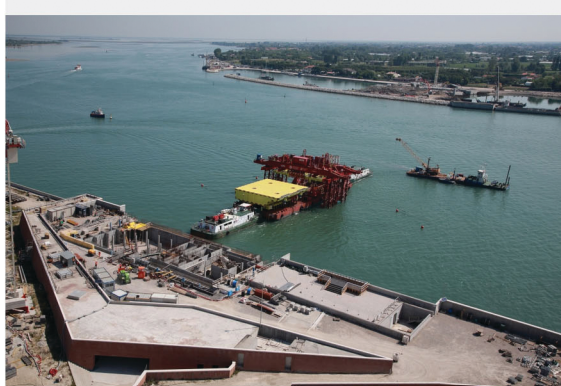
Current projections are less than rosy. According to scientific estimates, the earth's temperature will increase by 4-5 °C this century alone, leading to a sea level rise of approx. 50 cm by 2100. This prognosis, however, does not account for accelerated polar deglaciation, which could bump up estimates to 170 cm. Ready for another, more extreme extrapolation? If all of the polar ice caps melt, we can expect a sea level rise of 60 m, leaving just the top third of New York's Statue of Liberty peeking out from the Hudson River estuary. "Fortunately, this is not likely to happen in the foreseeable future," or so oceanographer and professor **Georg Umgiesser** explains, who explores such scenarios at the Italian Institute of Marine Sciences, ISMAR



1 of 4 The Sea Tree design by architect Koen Olthuis © Waterstudio.NL

### The potential of preventive measures

Climate change and the resulting greenhouse effect are in full swing. Even a truly radical gear change and turnaround in climate politics would leave our planet fighting the repercussions for a century to come. Against this background, scientists and architects join forces to develop protective solutions for people and the ground they stand on. Venice, for example, plans to ward off floods through its gigantic **Mose** project, scheduled for completion in 2016. Outsized concrete doors will seal off the city and Adriatic Sea to prevent the city from drowning – yet also imply the destruction of the Venetian lagoon's unique ecosystem. Professor Umgiesser also assigns top priority to climate protection and a respect for nature. Nevertheless, when considering Venice, he would opt to preserve the UNESCO World Heritage Site instead. "I think I speak for most people when I choose the preservation of Venice," he adds.



1 of 2 Venice Lido inlet in June 2013. A phase of the operations of sinking and attachment of the gate. © www.mosevenezia.it

Like two percent of the total land mass – and many densely populated hotspots of human civilization – Venice is situated less than ten meters above sea level. London, New York, Sydney, Mumbai, Vancouver, and Tokyo are among the cities endangered by climate change, but even more so large stretches of Bangladesh, The Netherlands, and the US East Coast. Around ten percent of the world's population call these coastal strips their home. Some municipalities have put tangible measures in motion, including New Orleans and Rotterdam – the latter more than six meters below sea level. After weathering a catastrophic flood, Rotterdam instigated a comprehensive storm tide prevention program called **Deltaworks**. A second severe threat, land erosion, is tackled via different means: In 2011, Holland's southern coast was treated to the so-called **Zandmotor**, a scheme to move 21.5 million cubic meters of sand from coastal waters to the beach, creating a massive dune and headland that is naturally distributed by wind, waves, and currents to provide protection and a new home for local flora and fauna. Thanks to this one-in-a-kind project, the coastal region no longer needs to shore up their beaches at regular intervals.



1 of 3 The storm-surge barrier Rotterdam (c) Rijkswaterstaat, part of the Dutch Ministry of Infrastructure and the Environment

Yet is this mammoth undertaking wise and future-proof? Not really, according to architects and scientists alike. Georg Umgiesser explains that "The Netherlands are actively considering raising their dykes." A few years down the line, today's stipulated levee dimensions will no longer be relevant or applicable. What then?

### Floating cities

A Dutch starchitect leads the way: Koen Olthuis and his **Waterstudio.NL** [The Hague] focus on planning and realizing water-based architectural projects; the results are often floating cities that drift on the surface in scattered arrangements. His reasons for building on water are twofold. Low-lying Holland is an artificial creation and constantly battling the incursion of water, making it high time and tide to find new solutions. "We need to develop proactive, not defensive solutions to these issues. When the water starts to threaten you, you build on it!" states Olthuis. On a different note, there is a global demand for alternative urban development visions beyond high-rise constructs and expansive blueprints with a large footprint. In future, metropolises will grow beyond the boundaries of terra firma.



1 of 2 The Greenstar Hotel and Conference Center, Maldives by architect Koen Olthuis Waterstudio.NL / Developer Dutch Docklands - www.dutchdocklands.com

Built from buoyant concrete to allow these floating houses to adjust to the tides and imminent flooding, the resulting habitations don't quite meet onshore standards yet. They certainly lack green spaces. It will take a strong and seismic social shift to turn water-based living into a mainstream choice and encourage decision-makers to back sizeable investments into this living concept and attract more people to a life on the waves.

One thing remains certain: Future city planning will undergo some drastic changes – and people will simply have to adapt to these new and unknown circumstances.

Text: Vanessa Obrecht

Header Image: The Sea Tree design by architect Koen Olthuis (c) Waterstudio.NL



### Vanessa Obrecht

Berlin [Website](#)

Born in Switzerland in 1985 Vanessa Obrecht studied Style&Design at the Zurich University of the Arts and has henceforth lived in Berlin for two years. As a freelance culture and lifestyle editor, she writes for various print and online magazines.